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On the Settlement of Losses by Fire under Average Policies. By RICHARD ATKINS, *Esq., Sun Fire Office.*

SINCE the last article on the settlement of fire-claims under average policies appeared (April, 1857), a very important change has been adopted. The third clause of the Liverpool floating policies, known under the title of the "independent liability clause," has been introduced, by the common consent of nearly all the Insurance Companies, and made part of the conditions of all London mercantile floating policies. The alteration is, beyond all doubt, a very considerable one in its practical effect. It will change entirely the mutual relation of the Companies in very many cases of joint insurances, and, if very great care be not taken at the outset, introduce no small share of doubt and difficulty in the relation of the Offices with the assured. It may, therefore, be worth while to offer a few remarks at the present moment on the change actually effected by the recent alteration of the average clause, and then make some practical suggestions as to the regulation of claims under the altered form of policy.

The first and, by far, the most important point to be noted, is, that the old empirical and unjust system fixing the policy of smaller range with priority of settlement, ceases its operation; so far, at least, as London mercantile insurances are concerned. A more just and intelligent rule is substituted. All average policies

covering, at any point, the same risk, are to be called to take their share in settlement and pay their proportion according to their ascertained liabilities. In a very short time, it will be a matter of curiosity and wonder to reflect upon the strange character of the old rule, which has prevailed and been quietly submitted to for so long a period. In any case, no one will be found of the opinion that the change recently made has been either a hasty or a premature measure.

The satisfaction derived from the contemplation of this judicious and necessary regulation is very considerably modified by the conviction of its incompleteness. There is so much left untouched, that future and, probably, not distant legislation will be urgently required. For example: the rule of calling upon specified policies to settle first, and which is still maintained in the second clause of the present average condition, is open to identically the same objections as in the case of limited averages. Why should a specified policy be called upon often to pay the whole loss, while an average policy, covering also the same goods, escapes? No better reason can be given for this portion of the old rule than for that which has been abandoned by general consent. The rule probably had its origin in the purpose of regulating losses where different kinds of policies existed in the same Office. This has been taken up and misapplied in the cases where such varied forms of policies exist in *different* Companies. The universal condition of specified policies is, that in case an insurance on the same property should be made in another Office, then each Office should bear its proportion of the loss. Upon what principle is it that the Company issuing an average policy inserts a clause declaring that the specified policy is bound to settle first, and abandon its own condition of paying only *pro ratâ*—thus furnishing the spectacle of one Office practically annulling, by its own act, the conditions of another Company?

Office A executes a specified policy, and inserts a condition, that, if the same property is jointly insured, a rateable proportion only is to be paid. On the other hand, Office S, which *does* cover the same property, although under a different form, sees fit to declare, that, in case of loss, the Office A must waive its own condition and bear the first brunt of the loss. It is not difficult to discern the reason for treating such varied policies when issued by one Company in the manner prescribed; but no better reason can be assigned for Office A allowing Office S to annul the condition of its policy in the manner referred to, than the intention which A has

to return the compliment in kind at the first opportunity which may present itself.

It cannot be alleged that any real difficulty exists in arriving at the respective proportionate claims of a specified and an average policy. The liability of each, separately ascertained, is the simple test of the proportion which each has to pay. The rule in such a case may be shortly stated, thus :—The amount of *liability* of every specified policy is the whole amount of loss, as far as the sum insured: on the other hand, the amount of *liability* of an average policy is, such a proportion of the loss as the sum insured bears to the value of the property covered. When these two liabilities, taken collectively, do not exceed the amount of loss, then each pays the whole amount of its liability; but when they exceed the total loss, then each settles on a *pro ratâ* calculation of the separate liabilities.

As the extension of the principle which affirms that joint average policies shall have a joint action in the settlement of claims, is now admitted, so, in like cases, joint specified and average policies would not involve any practical difficulty. It is to be regretted, that while an important alteration has been effected, it has not been made complete in this respect. The omission of the second clause in the present average form would have had the advantage of placing specified policies on the same footing as the more limited averages are now placed; thus introducing harmony into the different kinds of settlement, and at the same time establishing what is, in effect, a more clear and equitable rule.

It is also a subject of some regret, that the alteration made in the London average form was not extended at the same time to all average forms, and made to apply everywhere. It is understood that no change is to be made in the Liverpool mercantile policies. The old rule of the more limited range settling first will still be maintained, in all its integrity, in that large emporium of commerce. The practice which has been declared in London to be vicious, and to stand in need of alteration, is to be, for the present at least, upheld in this one important branch of business. It is not probable, indeed, that this can be any other than a temporary and transitory arrangement. The objections to the old system will be held, at no distant day, to be as unanswerable in the port of Liverpool as in the port of London. A heavy loss to be paid on a cotton-shed, with average clause, or under a dock or certified warehouse policy—while the wider range, or general floater, takes only a subordinate part, or possibly no part at all—will one day

give irresistible weight to the argument for change. The general adoption and application of the improved principle may be anticipated, with complete confidence, as likely to happen at an early date. In the meantime, it is presumed that the additional clause will form part of the average clause in all other branches of English business.

At the next opportunity, when the subject is under discussion, it will be highly desirable that the form itself of the average clause should undergo revision, with a view to alteration. The present form is unnecessarily diffuse—wordy—and is very far, indeed, from being lucid to any who are not already familiar with the subject. It might be with great advantage abridged, and would certainly become more intelligible in the process. Many improved forms have been at different times suggested; and, in the absence of any other or better, the following might serve as the basis for a remodelled declaration of average.

> It is hereby declared and agreed, that this Company shall be liable only for such a proportion of any loss as the sum insured by this policy may bear to the full value of the property covered.
>
> And it is further declared and agreed, that if the assured shall be also insured by any other Company on property wholly or partly covered by this policy, then this Company will bear its share of the loss in the proportion that the amount of its liability may bear to the amount of the liability of any other policy, separately ascertained by the rule of its own conditions.

This latter subject (the alteration of the clause) is, however, one which may be very conveniently laid aside until a suitable occasion for its discussion arises; and, in the mean time, it can be thought over, and preparation made for making the change, when it comes, more complete and effective.

The addition of the third clause to the two, forming the average clause (*see* the Number for April, 1857), which now forms part of the London mercantile policies, will be productive of very considerable practical results. These will appear in two directions: there will be the influence of the rules on the adjustment of claims among the Offices interested, and also those which regulate the settlement of losses between the Offices and the assured.

The settlement of claims among the different Companies, when jointly interested, will, in not a few cases—indeed, generally—assume a very simple form. A slight examination, however, will suffice to show that, for many others, clear rules are necessary to be promptly established, in order to exclude the risk of wide differences of opinion.

Take one or two of the most common forms of combination: a policy for merchandise in the docks, in Office A; one on goods in the wharves and docks, in Office P; and another general floater, including both docks and wharves, in Office S. A loss may happen in either range: first, in the docks; second, in the wharves; third, in a public warehouse, not included in either of the former. We have already seen, in former articles, in what manner the existing rules of settlement operate in each of these cases; the object of our present inquiry is, what will be the practical difference made by the introduction of the new clause.

Insurances.	Property.
Office A, £5,000 docks . .	. £10,000 docks.
„ P, £10,000 docks and wharves	. 5,000 wharves.
„ S, £5,000 general floater . .	5,000 elsewhere.

Loss, £6,000 in docks.

The former rule, as we know, would have compelled the settlement of this claim in the order of the extent of ranges. The present rule inquires for the amount of liability of each Office, independently taken, as though no policy but itself existed, and will give this result:—

	£
Liability of A, as £5,000 to £10,000—say, $\frac{1}{2}$ of loss	3,000
„ of P, as £10,000 to £15,000— „ $\frac{2}{3}$ of loss	4,000
„ of S, as £5,000 to £20,000— „ $\frac{1}{4}$ of loss	1,500
Total liabilities . .	£8,500

to pay the loss of £6,000. Each Office will then pay its share *pro ratâ.*

In this case, the sum of liabilities is seen to exceed the amount of loss, which brings the policies into apparent contact or dependence. It is obvious that it must be according as the distribution of property brings the joint liabilities up to, or to exceed, the amount of loss, that this kind of modified dependence is created. In all cases where the joint liabilities do not equal the amount of loss, each policy is strictly independent of the other, and settles and pays as though no other policy were in force. Take the same insurances—

Insurances.	Property.
Office A, £5,000 docks . .	. £10,000 docks.
„ P, £10,000 docks and wharves	. 30,000 wharves.
„ S, £5,000 general floater . .	10,000 elsewhere.

Loss, £6,000 docks.

	£
Liability of A, as £5,000 to £10,000—$\frac{1}{2}$ of loss .	3,000
,, of P, as £10,000 to £40,000—$\frac{1}{4}$ of loss .	1,500
,, of S, as £5,000 to £50,000—$\frac{1}{10}$ of loss .	600
Total independent liabilities . .	£5,100

Here it is seen that the aggregate sum of liabilities does not reach the amount of loss, and the policies are throughout strictly independent.

There is no ground for anticipating that any real practical difficulty will arise whenever the loss happens under circumstances that the whole of the policies are interested. Each can ascertain its own liabilitiy; and, upon this basis, the settlement may be made quite equitably to all the parties concerned. But where the loss occurs where all the Offices are *not* interested—say, with the policies just stated, in a wharf or in a warehouse, not in a dock or in a wharf—can a strict independence be then maintained, and the claim settled, without reference to existing policies not affected by the fire? Will the policies covering the lesser ranges—not extending to the place of the fire—be allowed to be exhibited, and brought in deduction of the amount of goods covered? To make the case clear, take, as before—

Insurances.	Property.
Office A, £5,000 docks . . .	£10,000 docks.
,, P, £10,000 docks and wharves .	5,000 wharves.
,, S, £5,000 general floater . .	5,000 elsewhere.

Loss, £3,000 on a wharf.

A strictly independent settlement would be—

	£
Liability of P, as £10,000 to £15,000—$\frac{2}{3}$ of loss .	2,000
,, of S, as £5,000 to £20,000—$\frac{1}{4}$ of loss .	750
	£2,750

Here the question is at once raised,—Ought the policy of A, £5,000 docks, to be brought into account, and allowed in deduction of the sum of property covered in the average statement? This important question, certainly not free from difficulty, may give rise to conflicting opinions, and the sooner it is met and answered the better. It is just one of those points which are so much easier to decide before a loss happens than afterwards, when heavy claims are to be adjusted among the disputants.

It may be shown (*see* article of April, 1857), that a strict construction of the independent liability principle does not admit, for

a moment, of any such rule of settlement. What has the Office with the wider range to do more than the declared conditions of its policy prescribe? Office P declares, by its policy, that it will pay such a proportion of the loss only as the sum insured bears to the value of the property; or, if jointly insured, in the place of loss with other Companies, pay *pro ratâ* with them. But why should the loss of P be *increased* by the fact of another insurance, not touching the fire, existing in Office A? For if the deduction of the policy of A be admitted, that rule of settlement would add to the loss of P £250 in the case just stated.

It may also be alleged, that there is not a word in the third clause, lately adopted, to sanction the practice; that clause does not go a step beyond a declaration of strict independence. Furthermore, although it is true that the strict construction of the clause would bear, in many cases, very hard upon the assured, it is clearly the fault of the assured himself in arranging his policies in a needlessly complicated form, with no other view or purpose than to save a small fraction of premium, and it is but just that he should take the consequences. Why should the uniform action of a sound rule be broken into to afford facilities for the assured to save a small margin of premium? To all this it might be added, with truth, that the principle of deducting the policies for the smaller limits is open to many grave objections, not the least of which is to be found in the uncertainty of defining, in many supposable combinations, what deductions should be admitted and what excluded, on the ground of greater or less extent of area.

There is one point of view in which a strict observance of the independent liability principle, in all its rigour, would produce results certain to be welcome to the manager of every Fire Insurance Company in the kingdom. Such an interpretation would very speedily bring to an end all those complicated combinations of average ranges which, at the present time, render it impossible to form even an approximate estimate of the total liabilities of the Companies in any one range. With policies running over one dock, —all the docks—wharves, including docks—public warehouses, including wharves and docks,—how can any manager form even a rude guess at what may be the total amount covered by his Company in any one range? Act, however, upon the rule of independent liability in its integrity; refuse, in short, to allow the exhibition of a policy for a minor range to be brought in a settlement of claim in deduction of the goods covered, and a great step will doubtless be made towards effecting a most desirable object.

The results would be immediate. All the different ranges must then be kept entirely distinct. There could no longer co-exist policies either in one Office or in several, with ranges running into, or (if the expression may be used) overlapping each other. We should then see policies for the docks—policies for the wharves, not including the docks—policies for the public warehouses, not including either docks or wharves—or, if these natural divisions did not suit the objects, or the peculiar trade of the assured, there would be the six miles floater, including all and excepting none.

It is very true that this arrangement of policies would not give all the materials for an exact account of the running liabilities of a Company; but the advantage in Offices of having to deal with policies thus classed, in making estimates of amounts of outstanding liabilities, need not be further expatiated upon or explained.

The object (if ever it should be attempted) would be best attained by submitting to the public the detailed forms of the proposed mercantile policies, upon the understanding that they must each be kept clear of the other—each form being subject, in case of claim, to its own independent average calculation. The following clause (or something like it) might then be added to the conditions, in order to remove all doubt or possible misapprehension.

> It is also declared and agreed that, if the assured has insured, by a separate policy or policies, with this or any other Company, for property in one or more of the warehouses or places within the range of this policy, then this policy will not extend to cover any goods in the said warehouse or warehouses thus separately insured.

This appears, at the first glance, to be a somewhat inviting view, and strongly to favour a strict interpretation of the new third clause; but on deliberate reflection it will be found, it is to be feared, quite impracticable. Sudden alterations of system, where large bodies of the public are concerned, are generally impolitic. Our present system has been one of long growth, and will with difficulty bear an entire change. The London merchants have been long used to the great facilities offered them by the mixed forms of floating policies referred to; and restrictions, suddenly adopted, would be justly viewed by them with distrust and suspicion. The plan of issuing only limited forms for ranges not touching each other, might be a very fair object for the Companies to aim at; but it would not prove, by any means, an easy task to convince the mercantile community that sufficient reasons existed for the sudden abolition of the old freedom allowed to their insurance operations. In any view of the case, the time does not appear

to have arrived for making an attempt at so considerable an alteration.

This being conceded, the rule of treating the sums insured by limited average policies in the same manner as specified policies are treated in the settlement of claims, must necessarily become of general adoption. Wherever the assured has policies of different ranges, and a loss happens in one or other of the more extended ranges, he must be allowed (in spite of all rules or theories to the contrary) to set off from the amount of property covered the amount he has specifically insured in the limited range or ranges.

A plain case or two will make the rule perfectly intelligible to those who may not be familiar with the subject.

Insurances.	Property.
Office A, £5,000 docks . . .	£5,000 docks.
„ G, £5,000 docks and wharves .	5,000 wharves.
Loss, £5,000 wharves.	

If the dock insurance is to be dealt with (as it must) as a specified policy, the calculation proceeds—as £5,000 is to £10,000; but deducting the dock policy—as £5,000 to £5,000; making the whole loss (£5,000) to be paid by Office G. On the strict construction of the third clause, the policy of A would not be permitted to be exhibited in reduction of property covered by G. This would give a settlement to G of £2,500, instead of £5,000, and the assured would recover only the half of his loss, although, as far as the total amount of insurance was concerned, he was fully covered.

A glance at this simple case shows that such mixed forms of policies could never be issued on the one side, nor accepted on the other, if such a construction of the clause were to be attempted. Such policies, and such a construction of the clause, cannot possibly coexist. It would be, no doubt, a very efficient weapon to compel an alteration in the forms of mercantile policies, and to enforce the rule that all classes should be kept distinct; but, until it is thought politic to attempt that alteration, the rule of deduction must, beyond all doubt, be held as the rule of settlement.

It being, then, abundantly clear that the rule formerly practised, of admitting in ordinary settlements the exhibition of policies for minor ranges in deduction from the sum covered, must be maintained and steadily acted on, the duty of the assessors of claims will be made easy by a general understanding taking place to govern their operations—the rule being, that lesser ranges of average policies are to be held in the same light and treated as speci-

fied policies, deducting the sum of such policies in the average statement as specifically covering that amount of the goods under the protection of the wider policy.

In the case of the London mercantile policies, the process of adjustment may often appear somewhat involved, from the various forms and ranges simultaneously in force. For example: there may be—1, a policy for one dock (say the London); 2, a policy for all the docks; 3, a policy for some wharves named and the docks; 4, a policy for all the wharves and docks; 5, a six miles policy, including all except the carriers' warehouses; 6, a six miles policy including the carriers.

A loss happening in the London Docks, all are directly interested, and there will be six liabilities to be independently estimated—all six paying each its quota part. A loss occurring at the St. Katharine Dock, under policy No. 2, there will then be five ranges interested, and each is required to make its own average calculation; but, in that case, the policy No. 1 must be allowed to be brought in deduction from the sum covered. Again, a loss in a warehouse not on a wharf or in the docks, under No. 5, Nos. 5 and 6 only would deal with the claim, while Nos. 1, 2, 3 and 4, would be shown for deduction. Finally, a loss in a carrier's warehouse would fall only on No. 6, the whole of the others appearing in the shape of a reduction of the amount of property covered, as though they had each been specified insurances.

The process described in the last paragraph has not the least pretension to the character of novelty; it is merely a continuation of the existing rule of settlement; and the only object of now describing it with some minuteness, is to prevent any risk of misapprehension on the part of those who may be called upon to apply the new third clause in the regulation of claims. That clause, as we have seen, alters fundamentally the process of adjustment among the Offices whose policies range over the place of the fire, and thus have a liability in common; but it leaves untouched the former laws of settlement as to those which cover specifically, or by a minor average range, a portion of the property included within the limits of the wider area.

Enough, and possibly more than enough, has been now said on the subject; and the entire object of these remarks will have been attained, if a clear and well-defined idea of the nature and extent of the change made by the recent alterations in the average form is promoted among those who are called upon to give practical effect to it in the adjustment of claims.

Before closing the article, it may be not without its use to those who are looking into the subject for the purpose of instruction, to specify, in an abridged form, some few of the points necessary to be borne in mind when looking for principles which lie a little below the surface. They are merely a repetition, in a condensed form, of statements already made in the present and former articles.

1. The amount of *liability* of every specified policy is the whole amount of loss, as far as the sum insured. The value of the whole property covered at the time of the fire forms no part of the inquiry.

2. In all cases where the sum of an average policy is equal to, or greater than, the property covered within its range, it becomes in all respects a specified policy, and has no advantage over it. The operation of the average principle has ceased to have any distinctive effect in the settlement.

3. Joint insurances of specified policies are quite *independent* of each other when their united sums are only equal to, or less than, the loss.

4. Joint average insurances are in like manner *independent* of each other when the sum of their *liabilities* is only equal to, or less than, the loss.

5. The only cases where the Offices are brought into contact, are when the gross amount of specified policies exceeds the amount of loss. In the same way are average policies brought into mutual dependence, when the united liabilities exceed the loss. The proportional settlement between the Offices proceeds in exactly the same form in both cases.

6. It follows, then, that so soon as the liabilities of average policies are independently ascertained, there is no difference of treatment between the amounts of those liabilities and similar amounts insured in the place of the fire by specified policies.

A portion of these remarks may possibly appear, to those well informed on the subject, as a useless repetition of trite and well-known principles. To this criticism the only answer needed is, that they are not intended for those who already know, but for those who do not know, the method of working these average problems. Of all the merchants who effect policies of this description, and whose interests are so deeply involved, how many really appreciate or comprehend the conditions of their policies? And as to those whose business it is, in the various Offices, to explain, while accepting risks, the practical operation of the clauses, and

those also who are called upon in case of loss to adjust the claims, it is not saying at all too much to remark, that there are not a few who will be the better for a renewed and thoughtful attention to the points discussed. To this it may be added, that if all those whose duty it is to understand the subject, but who do not, will only give a patient hearing to what has now been advanced, there will be an audience quite numerous enough to satisfy the ambition of the writer.

On the Value of Policies of Assurance in connection with Life Interests. By T. B. Sprague, M.A., F.I.A., *Actuary to the Liverpool and London Insurance Company.*

In the course of an actuary's practice, the question not uncommonly arises—What is the value of a life interest, accompanied by a policy of assurance on the same life? The most obvious course for solving this question is to value the life interest and the policy separately — the former by the well-known formula, $\frac{1}{p+d}-1$.*

With regard to the policy, it is not so clear how it should be valued. If valued on the same principles as the life interest, the value of a policy for £1 would be $1-(p+d)\,(1+\mathrm{A})$;† but this formula is quite inapplicable, for it gives a negative value for many years to a policy, and almost always a much smaller value than the surrender value allowed by the Office. There is, therefore, apparently no choice but to take the value of the policy at the latter amount.

By taking the policy, however, in connection with the life interest, we are able to attach a more definite value to it, as I shall now proceed to show. The method I am going to describe is one that has doubtless occurred to many other persons who have had occasion to think over the question; but as the subject

* This formula was first given by Mr. Griffith Davies: it coincides with the less elegant one given in *Jones on Annuities*, art. 246, $s=a.\frac{1-p\,(1+i)}{i+p\,(1+i)}$, which may be reduced to the form in the text by the help of the formula $d=\frac{i}{1+i}$. A proof of the formula, as well as of some very useful and practical extensions of it, is given by Mr. Jellicoe in the *Assurance Magazine*, vol. ii., p. 159.

† The value of a reversion, as given in Mr. Jellicoe's paper already referred to, is $1-d\,(1+\mathrm{A})$. In the case of a policy for £1, we must subtract from this value the cost of an annuity equal to the annual premium, or $p\,(1+\mathrm{A})$, giving the value of the policy as stated in the text, $1-(p+d)\,(1+\mathrm{A})$.